

WHAT IS CLAIMED IS:

1. A transmission method capable of transmitting and receiving a data signal and an information signal among a plurality of devices by full-duplex operation, wherein:

when the information signal consecutively repeats a single pattern, a different pattern is inserted between the same patterns before transmitting the single patterns.

2. The method as set forth in Claim 1, wherein the plurality of devices refer to two devices.

3. The method as set forth in Claim 1, wherein the different pattern is inserted between the same patterns at a random interval.

4. The method as set forth in Claim 1, wherein the different pattern is inserted between the same patterns at a fixed interval.

5. The method as set forth in Claim 1, wherein the different pattern is a pattern which is randomly selected from a group consisting of a plurality of different patterns.

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6. The method as set forth in Claim 1, wherein the single pattern is a code representing status information indicative of a state between devices.

7. The method as set forth in Claim 6, wherein the different pattern is a code different from the code representing status information.

8. The method as set forth in Claim 6, wherein the code representing status information is a code indicative of a stand-by state.

9. The method as set forth in Claim 7, wherein a time period for receiving a code representing data of the data signal and a time period for receiving a code representing status information of the information signal are distinguished from each other based on a reception signal, and the code representing data is adopted as a different code in a time period for transmitting the code representing status information.

10. The method as set forth in Claim 7, wherein, when a different code is received in the time period for receiving the code representing status information, a previously received code representing status information

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is maintained.

11. The method as set forth in Claim 6, wherein the code is a code in compliance with an 8B10B encoding system.

12. The method as set forth in Claim 1, wherein, when the single pattern to be consecutively repeated in transmission is changed into a pattern representing other information at the same transmission timing as with the different pattern, the pattern representing other information is transmitted.

13. The method as set forth in Claim 1, wherein variation points of a reception signal are detected so as to generate a clock to synchronize the reception signal based on an average interval between the variation points, and the data or information signal is received based on the clock thus generated.

14. The method as set forth in Claim 1, wherein the operation utilizes an optical signal.

15. A transmission method capable of transmitting and receiving a data signal and an information signal among a plurality of devices by full-duplex operation, wherein:

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when two different types of codes respectively including reverse "1" and "0" correspond to a single type of information contained in the information signal, and one of the two types of codes is selected and transmitted in accordance with an internal parameter, the internal parameter is caused to vary at random so as to transmit the code.

16. The method as set forth in Claim 15, wherein variation points of a reception signal are detected so as to generate a clock to synchronize the reception signal based on an average interval between the variation points, and the data or information signal is received based on the clock thus generated.

17. The method as set forth in Claim 15, wherein the operation utilizes an optical signal.

18. A transmission system capable of transmitting and receiving a data signal and an information signal among a plurality of devices by full-duplex operation, adopting a transmission method of a signal in which, when the information signal consecutively repeats a single pattern, a different pattern is inserted between the same patterns before transmitting the single patterns.

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19. A communications device capable of transmitting and receiving a data signal and an information signal among a plurality of devices by full-duplex operation, comprising:

a transmitter for transmitting the data and information signals; and

a receiver for receiving the data and information signals,

wherein:

the transmitter includes a random pattern generating section for randomly generating a pattern different from the information signal, an identification signal generating section for generating an identification signal which indicates whether a signal to be transmitted is the data signal or the information signal, and a transmitting section for transmitting the data or information signal based on the identification signal, and

the transmitting section, when the identification signal is the information signal and consecutively repeats a single pattern, transmits the information signal after inserting a random pattern generated by the random pattern generating section into the information signal.

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20. The communications device as set forth in Claim 19, wherein the receiver includes a signal judging section for judging whether a reception signal is the data signal or the information signal, and a setting section for setting a time period for receiving the data signal and a time period for receiving the information signal, in accordance with a result of judgment by the signal judging section.

21. The communications device as set forth in Claim 19, wherein the receiver includes a bit synchronization circuit for detecting variation points of a reception signal and generating a clock to synchronize the reception signal based on an average interval between the variation points.

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